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Educational Materials from the U.S. Geological Survey

Introduction

As the Nation's largest water, earth, biological science and civilian mapping agency, the U.S. Geological Survey (USGS) provides some of this science information as educational material. The product line includes a variety of teaching packets, booklets, posters, fact sheets, and CD-ROM's. Described below are products designed for K-12 teachers. The products marked with an asterisk (*) are sales items. Call 1-888-ASK-USGS for pricing and ordering assistance.

Unless otherwise noted, all of the following publications are available from:

USGS Information Services
Box 25286
Denver, CO 80225
Fax: 303-202-4693

When ordering, please include the identification number that follows each publication description.

When applicable, World Wide Web addresses are given for those publications that can be downloaded. Both Hypertext Markup Language (HTML) and Adobe System, Inc., Portable Document Format (PDF) are given, when available.

Customers with access to fax machines or to personal computers with fax reception software can retrieve some of these publications, primarily fact sheets, by using the USGS Fax-on-Demand System. To access the system, users can call from a fax machine's handset or from a touch-tone telephone. Dial 703-648-4888 and press "2" on your telephone keypad for publication information. Then after

selecting "2" again, you can key in the EARTHFAX number of the publication you want. You can request up to three documents per phone call.

Some publications are currently out of print. They may still be available through the Web or EARTHFAX. Such publications will be noted as "Web Only" or "EARTHFAX Only."

Teaching Packets with Activities

The following teaching packets are available in limited quantities. We request that teachers note the age appropriate packet for their use and request one packet per classroom. Materials within the packets have been designed to be reproducible. We also request that teachers and homeschoolers consider sharing packets. Please also note that the lesson plans and teaching guides for all of the teaching packets are available on the World Wide Web at <http://www.usgs.gov/education/>.

Exploring Caves—This K-3 teaching packet covers the related subjects of geology, cartography, and hydrology in a lighthearted story about Bat, who finds two lost children in a cave and teaches them various lessons as he guides them to safety. The packet includes a large, colorful poster, an instructional book for teachers that contains the read-aloud story, lesson plans, and student activity sheets. 97-0400
<http://www.usgs.gov/education/learnweb/caves/>

Map Adventures—This packet is appropriate for grades K-3. Students will learn basic concepts for visualizing objects from different perspectives and how to understand and use maps. It includes a two-sided color poster, teacher information, seven lesson plans, and two activity sheets. 97-0300
<http://www.usgs.gov/education/learnweb/MA/>

What Do Maps Show?—This packet for middle school includes a two-sided color poster with four accompanying lessons for learning geography and developing map reading skills. It also includes three maps and four activity sheets. 97-0250
<http://www.usgs.gov/education/teacher/what-do-maps-show/index.html>

Global Change—This packet is appropriate for grades 4-6. It covers four themes: time, change, natural cycles, and the Earth as home. It includes a two-sided color poster, teacher guide, and three activities. Each activity includes

background material, an experiment, three lesson plans, and suggestions for further reading. 97-0200
<http://www.usgs.gov/education/learnweb/GC.html>

Volcanoes!—This teaching packet for grades 4-8 will answer fundamental questions about volcanoes through the story of the 1980 eruption of Mount St. Helens. Includeed are a two-sided color poster, a teaching guide with glossary and bibliography, and six lesson plans with timed activities and activity sheets.
<http://www.usgs.gov/education/learnweb/volcano/>
Web Only

Exploring Maps—This interdisciplinary set of materials on mapping for grades 7-12 is designed to aid in teaching basic mapmaking and map-reading skills. It includes a teaching guide, four activity sheets, and two double-sided posters.
97-0150
<http://www.usgs.gov/education/learnweb/Maps.html>

Land and People: Finding a Balance—This teaching packet for high school challenges students to examine current environmental issues in three different regions and helps them prepare to find a balance between humans and the environment in the future. It contains a teaching guide, a colorful poster, and separate activities. The student materials include a reading about each region, a focus question that leads to role-playing activities, and scientific data about the region. 97-0350
<http://www.usgs.gov/education/learnweb/LandPeople/>

Paper Models

The following reports are three-dimensional, cut-and-paste paper models and computer animations illustrating geologic processes and other geologic phenomena. Both paper copies and electronic diskette versions are available. Both versions have the same patterns and text, although the diskette version may have animations that describe geologic processes. Requirements for using the diskette version are Apple Computer, Inc.; HyperCard 2.2 software and an Apple Machintosh computer with an internal disk drive. If you are using System 7, we recommend having at least 8 Mb of physical RAM with 4.5 Mb of memory available for HyperCard. Most of the model animations are available to view on the World Wide Web at <http://www.usgs.gov/education/animations/>.

How To Construct Two Paper Models Showing the Effects of Glacial Ice on a Mountain Valley—Includes two models showing a mountain valley partly filled by a glacier and the same valley after the glacier has melted.
*OF 89-0190 A, paper copy, 20 p.
*OF 89-0190 B, 3.5-inch diskette
<http://www.usgs.gov/education/learnweb/ice.html>

How To Construct a Paper Model Showing the Motion That Occurred on the San Andreas Fault During the Loma Prieta, California, Earthquake of October 17, 1989—Contains instructions and patterns for preparing a three-dimensional model that schematically illustrates the fault motion that occurred during the earthquake.
*OF 89-0640 A, paper copy, 10 p.
*OF 89-0640 B, 3.5-inch diskette

How To Construct Seven Paper Models That Describe Faulting of the Earth—Describes normal, reverse, right- and left-lateral strike-slip, and oblique-slip faults, and includes models of two fault-produced landforms, a graben and a horst.
*OF 90-0257 A, paper copy, 42 p.
*OF 90-0257 B, 3.5-inch diskette

Make Your Own Paper Model of a Volcano—Shows the inside and outside of a stratovolcano and includes a glossary of volcanic features.
*OF 91-0115 A, paper copy, 4 p.
*OF 91-0115 B, 3.5-inch diskette
<http://www.giseis.alaska.edu/Input/lahr/taurho/volcano/volcano.html>
EARTHFAX: 7211

How To Construct Four Paper Models That Describe Coral Reefs—Comprises four paper models that describe island reefs. The first model is a shield volcano that extends above the sea level, the second is a volcano with a fringing reef of coral, the third is a volcano with a coral reef and a lagoon, and the fourth is an atoll.
*OF 91-0131 A, paper copy, 20 p.
*OF 91-0131 B, 3.5-inch diskette

Map Projections—Describes and illustrates four main types of map projections commonly used to present thematic data.
OF 91-0553 A, paper copy, 92 p.
OF 91-0553-B, 3.5-inch diskette

Earthquake Effects: A Computer Animation and Paper Model—Illustrates by paper model and computer animation how an earthquake occurs and what types of damage may result.
*OF 92-0200 A, paper copy, 22 p.
*OF 92-0200 B, 3.5-inch diskette
<http://www.giseis.alaska.edu/Input/lahr/taurho/eqeffects/introduction.html>

Landslide Effects—Illustrates and describes four kinds of landslides: slump, slide, flow, and fall.
*OF 93-0278 A, paper copy, 43 p.
*OF 93-0278 B, 3.5-inch diskette

Make Your Own Earth and Tectonic Globes—Contains instructions and two patterns for making a terrestrial globe and a tectonic globe that are glued onto a tennis ball.
*OF 93-0380 A, paper copy, 14 p.
*OF 93-0380 B, 3.5-inch diskette

Northridge, California, Earthquake of January 1994—Includes animations and a paper model of the Northridge, California, earthquake.
*OF 94-0214 A, paper copy, 30 p.
*OF 94-0214 B, 3.5-inch diskette

Make Your Own Paper Fossils—Contains animations and paper models of two fossils.
*OF 94-0667 A, paper copy, 42 p.
*OF 94-0667 B, 3.5-inch diskette

Sea-Floor Spreading—A Computer Animation and Paper Model—Distributed with a Macintosh-compatible 3.5-inch diskette along with the paper copy.
*OF 95-0573

Arctic Delta Processes—Shows, by means of a computer animation and paper models, how deltas are affected by fresh and salt water currents, topography, and location. It is intended to help students visualize how ice shapes and forms a delta.
*OF 95-0843 A, paper copy, 27 p.
*OF 95-0843 B, 3.5-inch diskette

Ocean Trenches—Contains computer animations and a paper model illustrating how a subduction zone works. Students will better understand the processes that operate at converging margins between tectonic plates and how ocean trenches and the volcanoes associated with them are developed.
*OF 96-0076 A, paper copy, 41 p.
*OF 96-0076 B, 3.5-inch diskette

Crinoids—Shows, through computer animations and a paper model, how crinoids lived and became fossilized.
*OF 97-0091 A, paper copy, 56 p.
*OF 97-0091B, 3.5-inch diskette

Chicxulub Impact Event—Contains two paper models and computer animations that help illustrate how dinosaurs may have become extinct as a result of an asteroid impact.
*OF 97-0442 A, paper copy, 36 p.
*OF 97-0442 B, 3.5-inch diskette

Karst Topography—Illustrates, through computer animations and a paper model, why caves develop in limestone. By studying the animations and the paper model, students will better understand the evolution of karst topography.
*OF 97-0536 A, paper copy, 36 p.
*OF 97-0536 B, 3.5-inch diskette

Sand Dunes—Illustrates, through computer animation and a paper model, why sand dunes can develop different forms. By studying the animations and the paper models, students will better understand the evolution of sand dunes.
*OF 98-0131 A, paper copy, 64 p.
*OF 98-0131 B, 3.5-inch diskette

Antarctic Ice Sheet—Illustrates, through computer animation and a paper model, why there are changes on the ice sheet that covers the Antarctic continent. By studying the animations and the paper model, students will better understand the evolution of the Antarctic ice sheet.
*OF 98-0353 A, paper copy, 49 p.
*OF 98-0353 B, 3.5-inch diskette

Posters/Maps

Map Projections—A two-sided poster showing the frontispiece to Gerardus Mercator's *Atlas sive Cosmographicae* on one side and properties, characteristics, and preferred uses of many historically important projections and of those frequently used today on the reverse side.
96-0201 (folded version)

Fossils Through Time—A poster depicting the diversity and evolution of life on Earth during the last 600 million years, with photographs of fossils and corresponding explanations. Accompanies the booklet, "Fossils, Rocks, and Time." 96-0100

Planetary Maps—A two-sided poster showing a part of a geologic map of the near side of the Moon on one side and, on the other side, the variety of maps available of the Moon and Mars and some of Earth's other neighboring planets and their satellites.
96-0275 (folded version)

*This Dynamic Planet—A world map of volcanoes, earthquakes, and plate tectonics. (Complements "This Dynamic Earth: The Story of Plate Tectonics" booklet.)
GIA0023T (flat version)
GIA0022D (folded version)
<http://pubs.usgs.gov/pdf/planet.html>

*Landforms of the Conterminous United States - A Digital Shaded-Relief Portrayal—A large, digitally produced map illustrating geomorphic and tectonic phenomena of the United States in vivid detail. A 16-page booklet describing the map accompanies it. GI2206

*Digital Shaded-Relief Image of Alaska—A large map illustrating the physio-graphic features of Alaska from the artificial rendering of a digital elevation model. An 11-page booklet describing the map accompanies it. GI2585

*Mapping the Solar System—A two-sided poster with colorful airbrush illustrations of the planets and their satellites on one side and statistical information and geographic feature information on the reverse side. GI 2447T

*Geology of the Solar System—A two-sided poster with colorful geologic mapping and low-resolution, shaded-relief airbrush mapping of the terrestrial planets and outer satellites shown on one side and textural geologic information given on the reverse side. GI 2596T

What? Me a Scientist—A poster produced in cooperation with the Association for Women Geoscientists and showing women scientists at work. It may be used to encourage young women to choose scientific careers.
96-0020 (folded)
96-0021 (flat)

Each poster listed below was originally available in two versions—grade school and middle school. Several of the posters are currently out-of-print. Six posters of the nine-poster set may be viewed at the following Web site: <http://water.usgs.gov/public/outreach/OutReach.html>. The front side of each poster has a colorful cartoon graphic depicting the topic of the poster. The back sides of the posters contain educational activities, definitions, and interpretive questions concerning the poster topic. The educational materials on the back determine the appropriate grade level. The posters can be joined to create a wall mural. Black-and-white posters do not have activities printed on the back side and are coloring exercises for children in grades K-5.

Water: The Resource That Gets Used and Used and Used For Everything!—Shows 12 uses of water, from mining to transportation. The flow of water is depicted from the mountains through a reservoir, and past urban, rural, and industrial settings where various uses are featured. This poster is also available in Spanish.
96-0461 (grade school)
96-0462 (middle school)
96-0460 (black-and-white version)
96-0040 (black-and-white Spanish version)

How Do We Treat our Wastewater?—Illustrates the process by which wastewater is treated in cities, small towns, and rural areas.
96-0465 (middle school)

Wetlands: Water, Wildlife, Plants, and People!—Defines general types of wetlands, demonstrates how wetlands are depicted, and teaches how wetlands are beneficial. The diversity of plants and animals in wetlands is also shown.
96-0467 (grade school)
96-0468 (middle school)

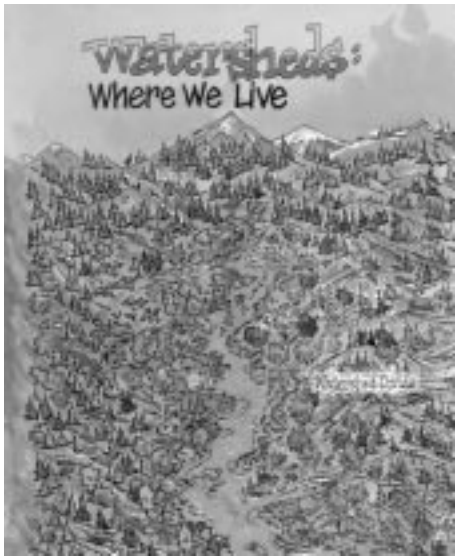
Ground Water: The Hidden Resource!—Displays the movement of water in a ground water system.
96-0458 (grade school)
96-0459 (middle school)

Water Quality . . . Potential Sources of Pollution—Features human activities associated with different sources of water pollution. It also shows the movement of waters between surface and ground water systems.
96-0469 (grade school)
96-0470 (middle school)

Navigation: Traveling the Water Highways!—Highlights the different kinds of vessels, port facilities, structures, and equipment needed for commercial operations on rivers and in coastal harbors. It was designed to introduce students to the many aspects of navigation.
96-0474 (middle school)

Hazardous Waste: Clean-Up and Prevention—Shows various hazardous waste sites, different types of cleanup methods used on these sites, and how hazardous waste moves once it is released into the environment.
96-0475 (black-and-white version)

Watersheds: Where We Live—Depicts three watersheds, identifying different physical features and management options within each watershed. The poster also depicts flooding and the importance of flood plains.
96-0479 (grade school)
96-0480 (middle school)
96-0478 (black-and-white version)



Oceans-Coastal Hazards: Hurricanes, Tsunamis, Coastal Erosion—Describes several natural processes or events that can change the shape of the coast and affect nearby environments. Designed as a contribution to the Year of the Ocean.
96-454 (grade school)
96-455 (middle school)
96-453 (black-and-white version)

The USGS is publishing new ecoregion maps of areas of the United States. On one side, these colorful maps show levels II and IV ecoregions of a specific area and provide descriptions and photographs of each ecoregion. The reverse side contains a summary table of the characteristics of the ecoregions and a bibliography. Ecoregions denote areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources. The following four ecoregion maps have been published so far.

*Ecoregions of North Dakota and South Dakota EC0001

*Ecoregions of Western Washington and Oregon EC0002

*Ecoregions of Indiana and Ohio EC0003

*Ecoregions of Tennessee EC0004

The USGS and its partners began work on The National Atlas of the United States of America in 1997. The National Atlas is designed to promote greater geographic awareness through products that provide easy-to-use, map-like views of our natural and sociocultural landscapes. It will include products designed to stimulate children and adults to visualize, comprehend, and even marvel at the complex relationships among environments, places, and people. Three published maps are now available. They can also be viewed at the following Web site: <http://www-atlas.usgs.gov/atlasmap.html>.

*Hydrologic Units—This map, published at a scale of 1:3,500,000, depicts a hydrologic system that divides and subdivides the United States into successively smaller river basin units. These subdivisions, or hydrologic units, are used for collecting and organizing hydrologic data. They represent natural and manmade stream-drainage areas. TUS5681

*Federal and Indian Lands—This map, published at a scale of 1:7,500,000, is colorcoded to represent the lands of the Bureau of Indian Affairs, Bureau of Land Management, Bureau of Reclamation, Department of Defense, Fish and Wildlife Service, Forest Service, National Park Service, Tennessee Valley Authority, Agricultural Research Service, Department of Energy, and Department of Transportation in the United States and Puerto Rico. TUS1445

*Principal Aquifers of the United States—This map, published at a scale of 1:5,000,000, shows the distribution of the major aquifers that supply ground water to the United States, Puerto Rico, and the U.S. Virgin Islands. Each aquifer is classified as one of six types of permeable geologic material. TUS5680

Booklets

Helping Your Child Learn Geography—This 32-page booklet, published in cooperation with the U.S. Department of Education and the National Geographic Society, is designed to help parents stir children's curiosity about geography. The activities can also be used in the

classroom. The activities are designed for children 5-10 years of age. 94-0130
<http://www.ed.gov/pubs/parents/Geography/index.html>

Fossils, Rocks, and Time—This 24-page booklet explains the basics of how fossils are used in establishing time sequence in geology. Accompanies the poster, "Fossils Through Time." 94-0054
<http://pubs.usgs.gov/gip/fossils/>

The Geology of Radon—This 28-page booklet presents geologic information about radon, including how it forms, the kinds of rocks and soils it comes from, and how it moves through the ground or is carried by water. Geologists also explain in the booklet how they estimate the radon potential of an area.
<http://sedwww.cr.usgs.gov:8080/radon/georadon.html/>
Web Only

Deserts: Geology and Resources—This 60-page booklet describes various types of deserts (including extraterrestrial deserts), illustrates various desert features and eolian (wind) processes, and discusses the use of remote sensing in studying deserts and the process of desertification.
<http://pubs.usgs.gov/gip/deserts/>
Web Only

Elevations and Distances—This 15-page booklet provides tables of information covering elevations of features and distances between points in the United States.
<http://mapping.usgs.gov/mac/isb/pubs/booklets/elvadist/elvadist.html>
Web Only

Earthquakes—This 20-page booklet explains the nature and causes of earthquakes. It describes techniques used to detect, record, measure, and forecast seismic disturbances. 94-0050
<http://pubs.usgs.gov/gip/earthq1/>

Acid Rain and Our Nation's Capital: A Guide to Effects on Buildings and Monuments—This 35-page booklet focuses on acid rain and its impact on our Nation's capital. The booklet defines acid rain, explains what effects it has on marble and limestone buildings, and shows, through a walking tour, some of

the places in Washington where you can see the impact of acid precipitation. 94-0051
<http://pubs.usgs.gov/gip/acidrain/>

Volcanoes—This 45-page booklet presents a summary of the nature of the Earth processes that create common types of volcanoes around the world, along with an introduction to the techniques of volcano-monitoring research. 94-0195
<http://pubs.usgs.gov/gip/volc/>

Volcanoes of the United States—This 44-page booklet describes the principal volcanoes that have erupted during the last few hundred years in Hawaii, Alaska, and the Cascades Mountain Range. It also summarizes recent events at active calderas in California and Wyoming.
<http://pubs.usgs.gov/gip/volcus/>
Web Only

Geologic Time—This 20-page booklet explains relative and radiometric time scales and how geologists measure the age of the Earth. It illustrates the scientific processes that are used to interpret the Earth's geologic history.
<http://pubs.usgs.gov/gip/geotime/>
Web Only

Topographic Mapping—This 20-page booklet introduces the elements of topographic mapping, including principal map series, scale, control surveys, national standards, procedures, symbols, revisions, and digital mapping. 94-0190
<http://mapping.usgs.gov/mac/isb/pubs/booklets/topo/topo.html>

USGS Maps—This 28-page booklet illustrates and describes types of USGS maps and gives ordering information. 93-0581
<http://mapping.usgs.gov/mac/isb/pubs/booklets/usgsmaps/usgsmaps.html>

Aerial Photographs and Satellite Images—This 21-page booklet illustrates various USGS aerial photographs and remotely sensed products. 96-0011
<http://mapping.usgs.gov/mac/isb/pubs/booklets/aerial/aerial.html>

This Dynamic Earth: The Story of Plate Tectonics—This colorfully illustrated 77-page booklet complements the poster entitled "This Dynamic Planet" and describes in detail the various aspects of plate tectonics. $6.00, 92-TDE
<http://pubs.usgs.gov/publications/text/dynamic.html>

*Eruptions of Mount St. Helens: Past, Present, and Future—This 56-page booklet highlights the eruptive history of this composite volcano, reviews its activity since its awakening in 1980, and speculates about its behavior in the future. 92-MTSTH
<http://pubs.usgs.gov/publications/msh/>

*Eruptions of Hawaiian Volcanoes: Past, Present, and Future—This 54-page booklet focuses on the volcanic history of the Hawaiian Islands with dramatic color photographs and diagrams and informative text on Hawaii's active shield volcanoes, Mauna Loa and Kilauea. 92-HAWV
<http://pubs.usgs.gov/gip/hawaii/>

Natural Gemstones—This 16-page booklet describes mineral and organic gemstones. It gives values of U.S. production of natural and synthetic minerals versus imports, as well as gemstone chemical formulas. Selected references are also supplied.
<http://pubs.usgs.gov/gip/gemstones/>
Web Only

Building Stones of Our Nation's Capital—This 36-page booklet describes the source and appearance of many of

the stones used in building Washington, D.C. A map and a walking guide are included. 94-0030
<http://pubs.usgs.gov/gip/stones/>

The San Andreas Fault—This 17-page booklet defines the San Andreas Fault and also discusses earthquake magnitude and intensity.
<http://pubs.usgs.gov/gip/earthq3/>
Web Only

Dinosaurs: Facts and Fiction—This 10-page leaflet answers a series of basic questions on dinosaurs, such as "Where did dinosaurs live?" and "Why did dinosaurs grow so big?" References are also included. 93-0020
<http://pubs.usgs.gov/gip/dinosaurs/>

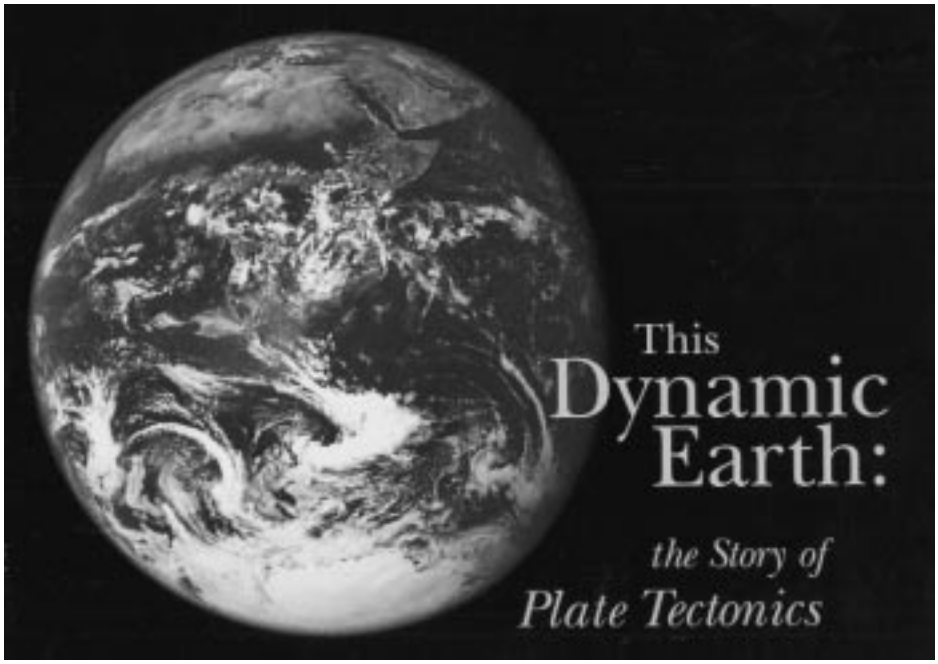
Ground Water and the Rural Homeowner—This 36-page booklet provides the rural homeowner with a basic description of ground water and problems one may expect to encounter when building, such as contamination from septic systems and lowered well-water levels. 94-0055

Fact Sheets

U.S. Geological Survey Information Sources—Lists addresses, telephone numbers, and e-mail addresses for sources of mapping, geologic, water, and biological resources information from the USGS. FS-057-99
<http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs05799.pdf>
<http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs05799.html>
EARTHFAX: 3001

Drought—Provides information on what droughts are, where they usually occur in the United States, and what can be done to solve water problems during periods of drought. FS-93-642
<http://water.usgs.gov/public/pubs/FS/OFR93-642/>
EARTHFAX: 5502

Floods and Flood Plains—Describes flood plains, factors that influence when or where floods occur, and how flood damage can be reduced. FS-93-641
<http://water.usgs.gov/public/pubs/FS/OFR93-641/>
EARTHFAX: 5503



USGS Tracks Acid Rain—Explains what acid rain is, how it is formed, and what its effects are. Also gives some information on what can be done to help control acid rain. FS-183-95
<http://btdqs.usgs.gov/acidrain/arfs.html>
EARTHFAX: 5504
Web and Earthfax only

Selected Earth Science Publications - Fact Sheets—Describes many of the fact sheets available from the USGS National Mapping Division. FS-120-96
<http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs12096.pdf>
<http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs12096.html>
EARTHFAX: 3028

What is Ground Water?—Explains how water gets into the ground. Illustrates and explains associated terms, such as water table, aquifer, permeability, and porosity. FS-93-643
<http://water.usgs.gov/public/pubs/FS/OFR93-643/>
EARTHFAX: 5501

Selected Earth Science Publications - Booklets, Leaflets, and Posters—Gives descriptions and ordering information for USGS National Mapping Division booklets, leaflets, and posters. FS-100-96
EARTHFAX: 3027

How to Obtain Aerial Photographs—Includes general information on ordering aerial photographs from the USGS and a checklist to use when ordering.
<http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs08199.html>
Web Only

National Atlas Maps—Presents a selection of maps originally published in the National Atlas of the United States of America by the USGS in 1970. FS-245-95
<http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs10799.pdf>
<http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs10799.html>
Web Only

Map Scales—Explains map scales and includes a table comparing the scales of various USGS map series. FS-056-98
<http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs05698.pdf>
<http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs05698.html>
EARTHFAX: 3103

* Indicates publication is a GPO product.

Looking for an Old Aerial Photograph—Lists sources for obtaining historical aerial photographs, including the USGS, the National Archives and Records Administration, and the Library of Congress. FS-127-96 <http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs12796.pdf> <http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs12796.html> EARTHFAX: 3204

Map Projection Publications—Describes nine USGS publications about map projections. FS-081-97 <http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs08799.pdf> <http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs08799.html> EARTHFAX: 3112

World Wide Web Site Information Sources

Shown below is a sampling of USGS and USGS Partner World Wide Web sites that offer you additional education resources:

<http://www.usgs.gov/education/>—USGS Learning Web Site. This site points to a variety of resources for the K-12 and life-long learning audiences. It focuses on living, learning, and exploring the web of life. It is an online source of most USGS teaching packets and includes Web-only teaching materials, such as "Mud Fossils" and "Geologic Age".

<http://www.usgs.gov/nationalatlas/>—National Atlas of the United States Web Site. This interactive site allows students to select and display map layers, roam across America and zoom in to reveal more detail, point at map features to learn more about them, and locate and map more than 2,000,000 geographic names in the United States. All data are documented and available for downloading.

<http://pittsford.monroe.edu/Schools/Jefferson/Maps&Globes/MapsGlobesFrame.html>—Maps and Globes Web Site. This Web site helps students learn about maps and globes. Topics include the Earth, water forms, land forms, climate, and time.

<http://www.terraserver.microsoft.com>—The Microsoft TerraServer Web Site. This site provides the general public with access to USGS digital orthophoto quadrangle (DOQ) images. A DOQ is a computer image of an aerial photograph with distortions caused by the shape of the ground surface and camera angle removed. It combines the details of a photograph with the geometric qualities of a map.

<http://TerraWeb.wr.usgs.gov/TRS/kids/>—TerraWeb Web Site. This was designed to help children (K-12) learn about the processes, tools, terminology, and uses of remote sensing.

<http://imagers.gsfc.nasa.gov/>—IMAGERS (Interactive Multimedia Adventures for Grade-School Education using Remote Sensing)—The Adventures of Echo the Bat Web Site. This site includes a wonderful story about Echo, the baby bat, and his adventures when he becomes lost in Arizona. Students learn about remote sensing and the electromagnetic spectrum to help find Echo. The teachers guide includes information on understanding light and biodiversity.

<http://water.usgs.gov/droplet>—Water Science for Schools Web Site. Information is given on the many aspects of water, along with pictures, data, maps, and an interactive center where students can give opinions and test their water knowledge.

<http://pittsford.monroe.edu/Schools/Jefferson/Animals/AnimalsFrame.html>—Animals Web Site. This site helps students learn about the animal classification system and animal functions. Topics include one-celled animals, jellyfish and corals, tapeworms, fish, amphibians, reptiles, birds, and mammals.

<http://www.frogweb.gov/>—FrogWeb Web Site. Focuses on the recent amphibian declines and deformities. Students are encouraged to adopt a frog pond and join the Frog Force to help monitor frog populations.

<http://www.mesc.nbs.gov/butterfly/butterfly.html>—Children's Butterfly Site. This site was developed for grades 4-6. Information is given on moths and butterflies, along with a coloring page, frequently asked questions and answers, a gallery of butterfly photographs, and links to other sites.

<http://north.audubon.org/>—Wild Wings Heading North Web Site. A fascinating interactive site that helps students learn about bird migration. Students track snow geese as they migrate and learn about bird banding, the importance of global change, and what they can do to help birds.

<http://www.nwrc.gov/fringe/ff_index.html>—USGS National Wetlands Research Center site featuring The Fragile Fringe: A Guide for Teaching about Coastal Wetlands teacher guide. An introduction is given on wetlands, along with several activities and additional resource lists.

<http://www.npwrc.org/resource/othrdata/westflor/westflor.htm>—Northern Prairie Wildlife Research Center, Western Wetland Flora, Field Office Guide to Plant Species Site. This site gives information on 300 species of vascular plants; it includes an illustrated glossary of floral terms and a species list and identification key.

<http://www.recreation.gov/>—Recreation.GOV Web Site. This is a one-stop resource for information about recreation on Federal lands. This Web site offers information from all the Federal land management agencies and allows students to search for recreation sites by State, agency, or recreational activity.

CD-ROM's

Topographic Field Trip of Washington, D.C.—This CD-ROM was designed for middle school students to travel through

Washington, D.C. It uses hypermedia to navigate through layers of information and link sounds, graphics, text, animation, and interactivity in a game-like adventure. Students will learn to measure distance and direction, determine latitude and longitude, identify map features, understand digital orthophotos, determine elevations, and examine historical maps. A fact sheet describing the CD-ROM is also available. Hardware requirements are given on the fact sheet. FS-025-98.
<http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs02598.pdf>
<http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs02598.html>
01-WASHDC—Macintosh version free while supply lasts
*01-WASHDC2—Macintosh and Windows 3.1x or 95

*Teaching Earth Science—This disc contains 17 animated teaching tools separated into three categories: Geologic Processes; Earthquakes and Faulting; and Map Projections and Globes. The tools include an Earth and Tectonic Globes file, which is provided as a printable model. The minimum system requirements inlcude a Macintosh or compatible computer with 68020 or higher processor, 8 Mb of RAM, Apple System Software version 7.0 or later, 13-inch color monitor, CD-ROM drive, and HyperCard Player 2.2 or higher viewing software. 01-DDS-0050

The following CD-ROM can be requested from the following address:

InterNetwork Media, Inc.
411 Seventh St.
Del Mar, CA 92014-3013
Phone: 888-755-3041, 619-755-0439
Fax: 619-481-8181
E-mail: inm@in-media.com

*GeoMedia—The USGS and InterNetwork Media jointly developed this interactive CD-ROM to teach children ages 10-14 about earth science. The program includes six topical modules: Understanding Maps, Time and Change, The Greenhouse Effect, the Carbon Cycle, Earthquakes, and the Water Cycle. GeoMedia, available for Windows or Macintosh platforms, can be used in a classroom setting or on your own. The

program requires one of the Macintosh suite of computers or a personal computer with a sound card running Windows 3.1 or Windows 95, a 13-inch or larger color monitor, 5 Mb of free memory, and a double-speed CD-ROM drive.

Information

For information on these and other USGS products and services, call 1-888-ASK-USGS, use the EARTHFAX fax-on-demand system, which is available 24 hours a day at 703-648-4888, or visit the general interest publications Web site on mapping, geography, and related topics at http://mapping.usgs.gov/mac/isb/pubs/pubslists/.

Please visit the USGS home page at http://www.usgs.gov/.

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